

CLAIMS

- Sub. B¹ 21*
1. A method of immunizing a vertebrate, said method comprising administering to a vertebrate a DNA transcription unit comprising DNA encoding a desired antigen operatively linked to a promoter region; whereby a humoral immune response, a cell-mediated immune response or both is elicited against the desired antigen.
- 5
2. The method of Claim 1, wherein the DNA transcription unit is of nonretroviral origin.
- 10
3. The method of Claim 2, wherein the desired antigen is capable of eliciting a protective immune response against an infectious agent.
- Sub. C¹*
4. The method of Claim 3, wherein the infectious agent is a virus.
- 15
5. The method of Claim 4, wherein the virus is an influenza virus.
6. The method of Claim 5, wherein the desired antigen is an influenza virus hemagglutinin.
- 20 *4* 7. The method of Claim 2, wherein the vertebrate is a mammal.
- 5* 8. The method of Claim *4* 7, wherein the mammal is a human.

6/ 9. The method of Claim 2, wherein the DNA transcription unit, in a physiologically acceptable carrier, is administered to a vertebrate through a route of administration chosen from the group consisting of intranasal, intravenous, intramuscular, intraperitoneal, intradermal and subcutaneous.

7/ 10. The method of Claim 2, wherein the DNA transcription unit is administered to a vertebrate by contacting the DNA transcription unit in a physiologically acceptable carrier with a mucosal surface of the vertebrate.

Sub 21-22 11. A method of immunizing a vertebrate against an infectious agent, said method comprising administering to a mucosal surface of a vertebrate a DNA transcription unit comprising DNA encoding a desired antigen operatively linked to a promoter region, in a physiologically acceptable carrier, thereby eliciting a humoral or cell-mediated immune response, or both, against the desired antigen, whereby the vertebrate is protected from disease caused by an infectious agent.

9/ 12. The method of Claim 11, wherein the DNA transcription unit is of nonretroviral origin.

10/ 13. The method of Claim 12, wherein the mucosal surface is a nasal mucosal surface.

11/ 14. The method of Claim 12, wherein the infectious agent is a virus.

15. The method of Claim 13, wherein the virus is an influenza virus.

16. The method of Claim ~~14~~⁹, wherein the desired antigen is an influenza virus hemagglutinin.

~~12~~¹³. The method of Claim ~~12~~⁹, wherein the vertebrate is a mammal.

5 ~~18~~¹³. The method of Claim ~~17~~¹², wherein the mammal is a human.

add
C2